

AMENDMENTS TO THE CLAIMS

1. (Currently amended) An integrated circuit chip including a pump comprising:
a cavity formed in an insulating substrate, a upper portion of the substrate located in the vicinity of the cavity and forming a border of the cavity;
a conductive layer covering the inside of the cavity ~~all the way~~ at least up to the border and possibly covering the border;
a flexible membrane, ~~formed of~~ including a conductive material, placed above the cavity and bearing against the border;
a dielectric layer ~~covering the conductive layer or the membrane to~~ that provides insulation between ~~insulate the~~ portions of the conductive layer and of the conductive material of the membrane which are close to each other; and
a pumping volume defined between the conductive layer and the flexible membrane;
a first opening that provides fluid communication to the pumping volume through the conductive layer;
a second opening positioned near the border of the cavity and that provides fluid communication to the pumping volume; and
~~terminals to receive and apply of application of a voltage between the conductive layer and the membrane to cause the flexible membrane to move~~
~~at least one of the ventilating ducts emerging into the cavity.~~
2. (Previously presented) The integrated circuit chip of claim 1, wherein said cavity has substantially the shape of a cup so that the interval between the conductive layer and the membrane progressively increases from the border to the bottom of the cavity.
3. (Previously presented) The integrated circuit chip of claim 1, wherein the membrane is in an idle state when no voltage is applied between said terminals, the application of a voltage deforming the membrane by drawing it closer to the conductive layer, the suppression of the voltage bringing the membrane back to its idle state.

4. Cancelled

5. (Currently amended) The integrated circuit chip of claim 1, wherein the first opening is positioned one duct emerges substantially at the bottom of the cavity, ~~of the pump, and another duct emerges close to the border of the pump.~~

6. (Currently amended) The integrated circuit chip of claim 1, further comprising a ventilating duct formed at least in part in the semiconductor substrate of the integrated circuit and that leads up to the first ~~and the second~~ opening.

7. – 10. Cancelled

11. (New) The integrated circuit chip of claim 1, further comprising a first ventilating duct formed at least in part in the semiconductor substrate of the integrated circuit and that leads to the first opening and a second ventilating duct formed at least in part in the semiconductor substrate and that leads to the second opening.

12. (New) The integrated circuit chip of claim 1, wherein the second opening is larger than the first opening.

13. (New) The integrated circuit chip of claim 1, wherein the dielectric layer is positioned on the conductive layer.

14. (New) The integrated circuit chip of claim 1, wherein the dielectric layer is positioned on the flexible membrane.

15. (New) The integrated circuit chip of claim 1, wherein the flexible membrane is formed of a conductive material.

16. (New) The integrated circuit chip of claim 1, wherein the second opening provides selective fluid communication with the pumping volume.

17. (New) The integrated circuit chip of claim 16, wherein application of the voltage to the terminals causes the flexible membrane to move toward the conductive layer to close fluid communication between the second opening and the pumping volume.